



## Utica Boilers MACF-150 - Submittal

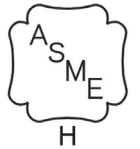


Engineer: \_\_\_\_\_

Project Name: \_\_\_\_\_

Project Location: \_\_\_\_\_

Contractor: \_\_\_\_\_



### APPLICATION:

Modulating Gas fired Combi boiler for indoor installation. Approved for closet or alcove installations. For use with natural or liquefied petroleum (LP/Propane) fuel gases. All boilers are factory assembled with controls and wiring and test fired to ensure dependable performance. Boiler shall be certified for Direct Vent applications only.

### CERTIFICATION AND APPROVALS:

Stainless Steel heat exchanger is manufactured and tested in accordance with American Society of Mechanical Engineers (ASME) and certified by Canadian Standards Association (CSA), AHRI, NRCAN. Registered with National Board BPVI, and Massachusetts Board. Stainless steel heat exchanger is tested for maximum allowable working pressure of 50 psig in accordance with ASME boiler and pressure vessel code, section IV, rules for construction of heating boilers. A 30 psig safety relief valve is shipped standard.

### BOILERS INCLUDE:

- Boiler is equipped with internal stainless steel brazed plate heat exchanger for potable hot water and automatic 3 way diverting valve to allow Domestic Hot Water Priority operation.
- Boiler includes factory installed and wired 2 speed circulator pump.
- Primary/Secondary manifold with quick connections supplied.
- Digital Boiler Control:
  - ▶ Control is self-commissioning, automatically recognizing fuel type (Natural or LP gas). Control continuously monitors flame signal and automatically adjust the gas valve during normal operation for optimum combustion and maximum efficiency.
  - ▶ Control system is PCB integral controller with LCD digital/graphical display.
  - ▶ Control senses supply water temperature and adjusts the boiler firing rate to deliver the amount of heat needed.
  - ▶ Control can sense and display supply water temperature and indicate when boiler is in central heating or domestic water mode.



Manufactured by:  
ECR International Inc.  
2201 Dwyer Avenue, Utica, NY 13501  
Tel. 800 325 5479  
[www.ecrinternational.com](http://www.ecrinternational.com)  
PN 615000268 REV. C [07/01/2021]



- ▶ Control has selectable DHW preheat mode. Preheat mode will maintain brazed plate heat exchanger temperature to speed DHW delivery.
- ▶ Control can accept a Outdoor Air sensor and has field adjustable reset curves.
- ▶ Control displays Error Codes and Diagnostic information.
- ▶ 0-10V input to manage heating set-point or heating power level.
  
- Boiler Combustion System:
  - ▶ The Gas valve is a modulating valve capable of firing from:
    - 153,000 BTU input down to 22,000 BTU input in Combi mode (7:1 turn down).
    - 125,000 BTU input down to 22,000 BTU input in Heat mode (5.7:1 turn down).
  - ▶ Induced draft blower is variable speed controlled by the PCB.
  - ▶ Burner is constructed of Iron-Chromium stainless steel.
  - ▶ Ignition system shall incorporate a Direct Spark Igniter and a separate Flame Sensing rod.
  
- Heat Exchanger:
  - ▶ Boiler's primary heat exchanger is constructed of Iron-Chromium stainless steel.
  - ▶ DHW brazed plate is constructed of Stainless Steel.
  
- Electrical
  - ▶ 120 volts AC, 60 Hertz, 1-phase; less than 15 amps.
  - ▶ Low voltage terminal strip for Thermostat, and Outdoor Air Sensor.
  
- Other:
  - ▶ Field supplied Anti-Scald valve is required for Domestic Hot Water Supply.
  
- Warranty
  - ▶ Factory Standard Warranty is 10 years on heat exchanger, one year on parts.
  - ▶ Warranty is extended to 10 years on heat exchanger, two years parts plus two years labor upon warranty registration and completion of contractor registration.
  
- Optional Equipment
  - ▶ Outdoor Air Sensor Kit
  - ▶ Coaxial and Two-pipe venting components





<b>Clearances</b> <small>(2) Required distances measured from boiler.            (3) Service, proper operation clearance recommendation.</small>		<b>Combustible Materials (Required) <sup>(2)</sup></b>		<b>Service <sup>(2) (3)</sup></b>	
	<b>Top</b>	0" (0 mm)		8.66" (220 mm)	
	<b>Left Side</b>	1.77" (45 mm)		12.00" (305 mm)	
	<b>Right Side</b>	1.77" (45 mm)		1.77" (45 mm)	
	<b>Front</b>	0" (0 mm)		17.71" (450 mm)	
	<b>Back</b>	0" (0 mm)		0" (0 mm)	
	<b>Bottom</b>	0" (0 mm)		0" (0 mm)	
	<b>Combustion Air/Venting Piping</b>	0" for Concentric		6" (160 mm)	
<b>Connections MACF-150</b>	1/4" Sweat Copper Stub Heating Supply & Return, Gas Connection 3/4" NPT (Male)				
<b>Connections MACF-150 DHW</b>	1/2" Sweat Inlet & Outlet				
<b>Electrical</b>	120 Volts AC, 60 Hertz, 1 phase, less than 12 amps (15 amp circuit recommended)				
<b>Relief Valve Connections</b>	3/4" NPT				
<b>DHW Flow Rate</b>	3.5 GPM @ 70°F				
<b>Dimension/Weights</b>	<b>Model</b>	<b>"Width"</b>	<b>"Height"</b>	<b>"Depth"</b>	<b>"Weight"</b>
	MACF-150	18.56"	40.23"	17.46"	103 lbs
		472 mm	1.0 m	443 mm	46.72 kg

Size	Input Rate (MBH) 0-2000ft	Heating Capacity (MBH) 0-2000ft	Net AHRI Rating, Water (MBH) 0-2000ft	Vent Diameter O.D. Coaxial	Vent Diameter 2-pipe	AFUE (%)
<b>MACF-150 Heating Mode</b>	125	113	98	4" / 2" 100mm/60mm	2" or 3"	95.0
<b>MACF-150 DHW Mode</b>	153	136	N/A	4" / 2" 100mm/60mm	2" or 3"	N/A

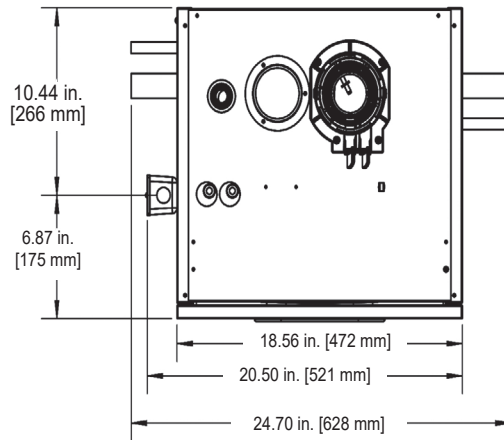


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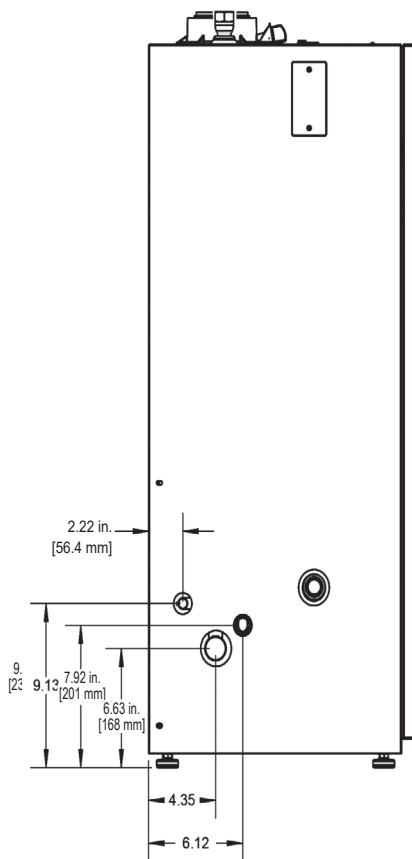
<b>Central Heating (Sealed System)</b>	<b>MACF-150</b>
Heat Exchanger Max Allowable Working Pressure	50 psi [3.45 bar]
Max System Pressure	30.00 psi [2.06 bar]
Min System Pressure	7.25 psi [0.50 bar]
Max System Temperature	176°F [80°C]
Pressure Relief Valve Setting	30.00 psi [2.06 bar]
Expansion Tank Minimum Size (pre-charge press.)	2.2 gal at 11.6 psi [10.0 L at 0.8 bar]
Recommended Operational System Pressure (cold)	21.7 psi [1.5 bar]

<b>Domestic Hot Water (Sealed System)</b>	<b>MACF-150</b>
Max Inlet Water Pressure	116 psi [8 bar]
Min Inlet Water Pressure	2.9 psi [0.2 bar]
Min DHW Flow Rate	0.55 gpm [2.50 L/min]
Max DHW Temperature	140°F [60°C]
DHW Water Content	0.05 gal [0.23 L]

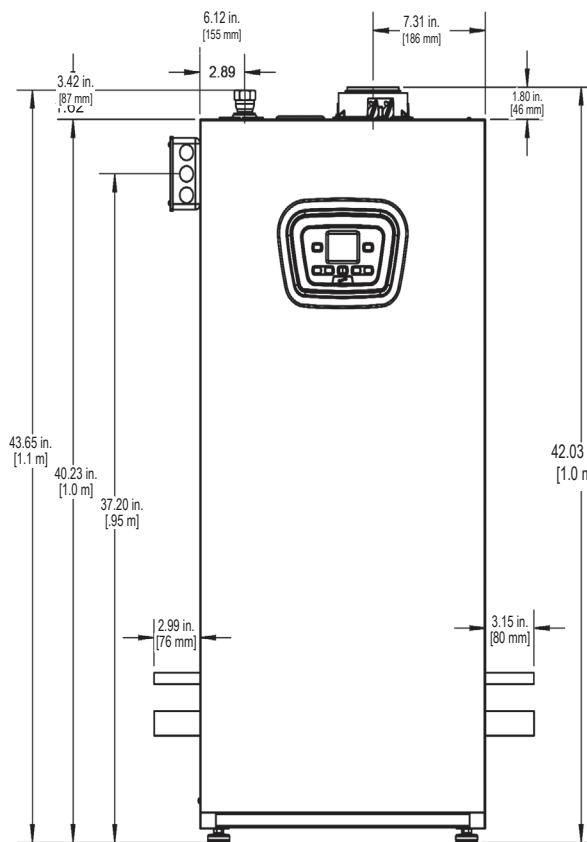
**Top View  
All Models**



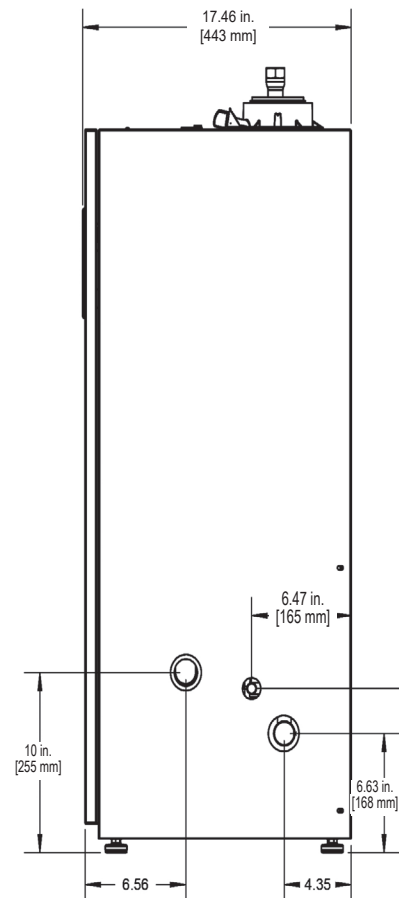
**Left Side  
View  
All Models**






**Front View  
All Models**



**Right Side  
View  
All Models**



## Venting

<p><b>Coaxial Venting</b> Connects directly to the top of the boiler</p> 
<p><b>2-Pipe Venting - Optional Kit</b> Using polypropylene - 80 mm venting</p> 
<p><b>2-Pipe Venting - Optional Kit</b> Using CPVC UL1738/S626 - 3" venting</p> 

Total Vent Equivalent Lengths* - Account For Fittings As Listed					
	Coaxial	Twin Pipe			
		Rigid		Flexible	CPVC UL1738/ S636
Vent Size	4"/2" [100/60]	3" [80 mm]	2" ** [60 mm]	3" [80 mm]	3" [80 mm]
Total Maximum	32.8 ft [10 m]				
Air Intake Maximum		49 ft [15 m]	85 ft [25.9 m]	50 ft [15.2 m]	49 ft [15 m]
Intake + Exhaust		196.8 ft [60 m]	170 ft [51.8 m]	130 ft [40 m]	196.8 ft [60 m]
90° elbows	3.28 ft [1.0 m]	1.64ft [0.50 m]	3 ft [0.91 m]	1.64ft [0.50 m]	1.64 ft [0.50 m]
45° elbows	1.64 ft [0.50 m]	0.82 ft [0.25 m]	5 ft [1.5 m]	0.82 ft [0.25m]	0.82 ft [0.25 m]

\* Refer to IOM for complete venting details.  
 \*\* Use venting manufacturer's components to transition from 3" [80 mm] to 2" [60 mm]